UNITED STATES PATENT APPLICATION

FOR

APPARATUS AND METHOD FOR TIMING EVENTS

INVENTORS:

Erik A. McMillan
Mark W. Blecher

Correspondence Address:

JOHNSON & ASSOCIATES
P.O. Box 90698
Austin, TX 78709-0698
(512) 301-9900
(512) 301-9915 (FAX)

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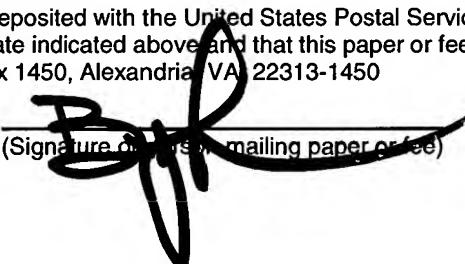
APPARATUS AND METHOD FOR TIMING EVENTS

CROSS REFERENCE TO RELATED APPLICATION

[01]   This application claims priority under 35 U.S.C. § 119 to co-pending, commonly

5   owned United States provisional patent application serial number 60/390,408 filed on

June 24, 2002, entitled "TEST-MAN".

FIELD OF THE INVENTION

[02]   This invention relates to timers. In particular, this invention is drawn to an

apparatus or method for timing events.

10   ## BACKGROUND OF THE INVENTION

[03]   In almost all human endeavors, the time allotted to finish a specific task or project

is limited. Although there are many factors involved in completing a designated task

optimally, time is usually a major contributor.

[04]   For example, while it is true that better knowledge of the subject matter on a

15   timed exam is paramount in achieving a satisfactory score, such knowledge alone can not

assure the test taker a superior score.   The reason involves the time limits placed on

completing the test. That is, even if, the test taker knows how to complete each problem

successfully, if he/she is not able to finish in the allotted time frame, the score will be

materially lowered. Therefore, in order to maximize the score on any given test, the test

taker must combine their knowledge of the subject with a method of time management.

[05]   Every year thousands of students graduate from high school, college and graduate

school looking for ways to further their education. Before applying to universities in

5   hope of acceptance, students must pass certain standardized tests. To get into college on

the under graduate level, you must take the SAT and SAT II tests. To get into law school

students must take the LSAT, for medical school the MCAT, and for Masters of Business

Administration the GMAT. There are hundreds of tests to take for hundreds of different

professions and degrees.

10   [06]   As mentioned above, one of the reasons standardized tests are so difficult is the

short time constraint put on the tests. An example, from the LSAT, is finishing 26

complicated logical reasoning multiple-choice questions in 35 minutes. The average test

taker cannot accomplish this task. The same goes for all other standardized tests: test

takers cannot finish on time. In fact, the time factor is probably the single most important

15   factor in determining whether an applicant scores acceptably high and gets into the

school of their choice, or whether their scores are unacceptable and they have to settle for

a less satisfactory school or a different avocation all together. The reason is that, with

ample time, many of the exam questions can be answered correctly. The ability to

manage this time is crucial.

[07]   One problem is that students don't usually have enough time on standardized tests, and as a result, either leave an unacceptably high number of questions unanswered, or resort to a very low percentage "guessing" strategy. There are various and cumulative reasons for this time issue – including allocating an inefficiently high amount of time on

5   any one question. For example, a student may be able to answer a question on average in 1 minute. However, on a more difficult question, the student spends 5 minutes. However, even if this question is answered correctly, if it leads to 5 unanswered questions, the student's test score will suffer materially. Just as it is with those taking standardized tests, it is also difficult for students at all levels of education to finish their

10   exams on time. Elementary, junior high, high school, college, graduate, and professional exams all have tough time constraints. Students must understand and practice good time management techniques through out school in order to get good grades and move on to the next level of education.

[08]   There are also other tasks that are carried out in anyone's life that require good

15   time management techniques. Exercise is another task that timing per a specific event is very important. If you need to run 10 laps in a total of 20 minutes, it would be useful to know how fast to run each lap. Plus, you would need to know how long you had been running each lap, and how much time you had remaining on each lap. The same would apply to swimming laps or running miles.

20   [09]   There are many simple count- up or count-down timers on the market that students are currently employing for practice test-taking use. But these timers make

beeping noises and are prohibited for use on test day. The only option a user has is to modify exiting timers by cutting wires or removing speakers. There are also no prior art timers that address the other problems discussed.

[10]   There is a need for a better time management tool to help time specifics of certain

5   events to finish them on time. There are numerous applications or professions that need specific time management tools, in addition to the ones mentioned in this description. There is also a need in the market for a timer to address the problems discussed above.

[11]   There are also insufficient guidelines or methods in the prior art for how to efficiently manage time on tests, sporting events or other life tasks using a timer. There

10   are very important timing strategies that pertain to each possible timed event. These strategies would show the best ways to utilize the timer for maximum efficiency. For example, on the LSAT, there are 4 unique sections that each must be approached in a different manner with regards to timing strategy. Logical Reasoning, Reading Comprehension, Logic Games, and Writing are all integral parts of the LSAT. The Logic

15   games section of the exam has a completely different time strategy than the Logical Reasoning section. One is based on 4 main time sections, and the other on time per each individual question. A good set of timing methods and strategies is needed to help anyone keep track of any timed event.

SUMMARY OF THE INVENTION

[12]   An method is provided for displaying examination information during one or more portions of an examination, comprising the steps of: providing a timer for timing the duration of a portion of the examination; tracking the number of questions answered by a user during the portion of the examination; and displaying information relating to both the time remaining in the portion of the examination and to the number of questions remaining in the portion of the examination.

[13]   One embodiment provides a timer for timing an event comprising: a display; one or more buttons for allowing a user to start and stop the timer; and a visual indicator for alerting a user to an event, wherein the user is alerted without using an audible device.

[14]   Another embodiment provides a method of displaying information during a timed event having sub-events, comprising the steps of: providing a timer for timing the duration of the event; tracking the number of sub-events during the event; and displaying information relating to both the time remaining in the event and to the number of sub-events.

[15]   Other objects, features, and advantages of the present invention will be apparent from the accompanying drawings and from the detailed description that follows below.

BRIEF DESCRIPTION OF THE DRAWINGS

[16]   The present invention is illustrated by way of example and not limitation in the figures of the accompanying drawings, in which like references indicate similar elements and in which:

5   [17]   FIG. 1 is a side view of one embodiment of a timer of the present invention.

[18]   FIG. 2 is an isometric view of the timer shown in FIG. 1.

[19]   FIG. 3 is a view of a timer of the present invention.

[20]   FIG. 4 is an enlarged view of the display shown in FIG. 3, illustrating an example of information that can be displayed.

DETAILED DESCRIPTION

[21]   Generally, the present invention provides a method and apparatus for timing events and sub-events that solves the problems discussed above. The timer allows a user to time the duration of an event. During the event, sub-events may also be timed, by use

5   of a sub-event trigger (e.g., a sub-event button). A display can display information relating to the timed event and sub-event. For example, the timer may display the time elapsed or time remaining in the event, the number of past sub-events, the number of remaining sub-events, and/or statistical information relating to the timed event and sub-events.

10   [22]   In one example, a timer of the present invention is used to help students efficiently and silently monitor time on standardized tests such as the LSAT, MCAT, GMAT, SAT, GRE, etc. The following description will describe the use of the invention in a testing environment. However, in addition to a testing environment, a timer of the present invention may also be used for any other task requiring something to be timed.

15   [23]   A timer of the present invention is a device that gives users the edge they need to score higher on standardized tests. In addition, a timer of the present invention can also keep track of the total time elapsed, number of unanswered questions remaining, and average time remaining per unanswered question available in order to allow the students to allot the optimal amount of time per question, and as a result, maximize their chances

20   of getting the score necessary to meet their preferred schools entrance criteria. A timer of

the present invention is capable of monitoring test time, time per question, and statistics

pertinent to getting the test done on time. Practicing with this product and utilizing it on

test day will increase a user's scores.

[24] A timer of the present invention can be used to help users take standardized tests.

5   One advantage provided by the invention is to increase time per question efficiency,

decrease anxiety, and thereby increase test scores. By using a timer of the present

invention, a test taker focuses less on the time left on the test, time left on the section and

time per question; and more on getting each question correct.

[25] In some embodiments, a timer of the present invention has an LCD screen, which

10   displays the time information to the test taker. The test taker can view the following in

real time: total time elapsed on the test or test section (counting up from 0, or down from

the time allowed per section), the number of unanswered questions remaining per section,

the question currently being solved, the allotted time remaining on the current question,

and the available time remaining for each unanswered question.

15   [26] By using the invention, the test taker is able to: set the amount of time on the test

section, set the amount of questions in the section, set which question is currently being

worked on, recall from memory certain individualized time data gleaned from earlier

practice exams, receive a "end of section" (e.g., at 1 minute) warning light, receive a

warning light (e.g., at 3 seconds) when too much time is spent on one question, adjust the

20   warning time or turn the warning light off, choose to view either "Time Remaining"

(count down) per section or "Time Used" (count up) per section. The user can also

switch in between "count down" and "count up" while the time is active. For example,

assume that a user sets the timer for 30 minutes, and presses Start. After 1 minute has

passed, the timer will read "29 minutes" in Count Down mode. Then, a user can press a

5   button to switch to Count Up mode. When a user pushes the button, the timer will read

"1 minute" and continues counting up. The time per question features works in both

Count Down and Count Up mode. The current time (clock) can be viewed while

actively using the timer as well. In one example, while counting down, the clock button

can be pressed and the current time is shown for 3 seconds and then returns to the count

10   down.

[27]   In one example, the timer is implemented in the form of an electronic device. A

timer of the present invention may be implemented as a stand alone device, or can be

incorporated into another device, such as a watch, telephone, pen, alarm clock, car dash

device, tool, etc.   The timer can also be implemented as a software application and run

15   on a PDA, computer, cell phone, micro device, etc. The use of a timer can remain the

same regardless of how it is implemented. For example, the timer can be used to help

time any activity with a set amount of time and certain number of tasks (questions to

answer, laps to run, patients to see, lawns to mow, cars to wash, etc).

[28]   One example for a use of the invention is with the GMAT and GRE. These

20   standardized tests are administered on a computer and timing devices, pencils, paper, etc

are not allowed into the test room. The invention can be implemented on the computers

where these tests are given. Within the computer exam, the timer can show all necessary timing information to the test taker.

[29]   FIGS. 1-4 illustrate one examples of how a timer of the present invention can be implemented. FIGS. 1-4 show an example where the timer is designed for use in a test

5   taking environment. As mentioned above, other implementations are also possible.

[30]   FIG. 1 is a side view of a timer 10 resting on a surface 12. The timer 10 includes a housing 14 and a plurality of buttons and one or more displays (described below). A fold-out stand 16 can be used to prop the housing 14 in the position shown in FIG. 1. With the timer 10 propped up, a user will have a clearer view of the buttons and display

10   of the timer 10. The housing 14 of the timer has the shape of a parallelogram when viewed from the side. Top and bottom surfaces 18 and 20 are angled with respect to front and back surfaces 22 and 24 such that, when the timer 10 is propped up using the stand 16, the top surface 18 and bottom surface 20 are generally parallel to the surface 12, which makes the timer 10 more stable, as well as making the top surface 18 more

15   accessible to the user.

[31]   FIG. 2 is an isometric view of the timer 10 shown in FIG. 1. FIG. 2 shows a button 26 formed on the top surface 18 of the timer. On the front surface 22 of the timer, a plurality of buttons 28, a display 30, and a light 32 are formed. The operation of the buttons 26 and 28, display 30, and light 32, are described in detail below.

[32]   FIGS. 3 and 4 illustrates an example of a timer 10 of the present invention,

showing exemplary controls and displays. A description of the functions of the various

buttons and displays follows. The timer 10 has a button 26 that can be pressed by a user

after finishing each question. Pressing button 26 updates the count of questions

5   completed and recalculates question times. A warning light 32 lights at one-minute

remaining, for example (or at any other alternative warning time chosen by a test taker).

The timer 10 includes an LCD display 30, having, in this example, two portions, 34 and

36. The display 30 is shown in detail in FIG. 4. A plurality of number buttons 38 are

provided for number entry by a user. A memory button 40 is used to store various

10   individualized data, entered by a user. A time button 42 is used by a user to enter the

total time allowed for a particular section of a test. A questions button 44 is used by a

user to enter the total number of questions in a particular section of a test. A user presses

question button 44 before entering the number of questions on a test using the number

buttons 38. A plurality of standardized exam buttons 46 provide testing times and

15   number of questions per section for various standardized exams, such as the LSAT,

GMAT, MCAT, SAT, GRE, SAT II. Of course, the buttons could correspond to other

exams or tasks as well. The exam buttons 46 allow the timer 10 to be used for various

standardized tests, without the user having to manually enter the timers and number of

questions for each test. The light on/off button 48 allows a user to turn the warning light

20   32 on or off. The start/stop button 50 allows a user to start and stop the timer 10.

[33]   FIG. 4 is an enlarged view of the display 30 shown in FIG. 3. The display 30 has

two portions, 34 and 36. The display 30 displays various information relating to the

operation of the timer. In the example shown in FIG. 4, the display 30 displays the

following information. The number of questions completed is displayed at 52. The

number of questions remaining is displayed at 54. The amount of time available per

uncompleted question is displayed at 56. The time left on the current question is

5   displayed at 58. The count up or count down of total time is displayed at 60.

[34]   The timer described above is a test-taking tool. The timer provides, down to the

question, time specifics. The timer helps the user manage their time efficiently on each

question.

[35]   Following is a description of an example of the operation of the timer described

10   above in an examination environment. When the test taker is about to begin the test, they

set a couple simple parameters that will help them gauge their time for each question.

First, the total amount of time allowed for the test or test portion is entered (via time

button 42 and number buttons 38). Second, the amount of questions for the test or test

portion is entered (via questions button 44 and number buttons 38). For example, if the

15   test has 25 questions and must be completed within 35 minutes, the student will hit the

time button 42 and then enter 35:00 using the number buttons 38. Next, they will hit the

questions button 44 and enter 25. Now the timer 10 is ready for the test to begin. After

the student hits the start button 50, the timer 10 keeps a running total of the amount of

time used during the test, as well as keeping track of time per question available.

20   Alternately, the memory button 40 can be used (described below). In another example, a

user can use one of the exam buttons 46 to automatically set the appropriate values for time and questions, without the need for manual entry (described below).

[36]   In the example described above, for a 35-minute, 25 question test, the student starts off with an average of 1 minute 24 seconds for each question. The timer counts down the amount of time that should be spent on each question and displays this amount of time at 58. For example, on the first question of the 35-minute test, the timer counts down (and displays at 58) from 1:24 to zero. This lets the student know how they are doing on time for each question.

[37]   After the student answers each question during a test, the student hits the button 26 on top of the timer 10, which resets both the time available per question and the question timer. For example, if the student spends 2 minutes on the first question (40 seconds too long), the student will hit the button 26 on top of the timer 10. Now, the time available per question (displayed at 56) will drop to 1:18. As displayed, there is now less time per question displayed for upcoming questions. If the student then answers the 2nd question in 0:30, the time per question available increases to 1:22. This process continues until the student is finished with the test. The number of questions completed (displayed at 52), and number of questions left (displayed at 54) also changes after each question.

[38]   Generally speaking, after each question is completed, the button 26 (i.e., the sub-completion trigger) is pressed. At that point, the test taker can be told, via the

display or other user perceivable device: (1) the total amount of time the test will take to complete, assuming his answer completion pace remains unchanged; (2) how far ahead or behind he is on "time per question" basis; (3) how much more quickly the next question must be completed in order that the test taker be back on schedule to complete within the

5   allotted time; and (4) a possible suggestion that a question or two be skipped in order to get back on pace.

[39]   The use of the button 26, the sub-completion trigger, to move to the next question is only one example of how the timer can be advanced to the next task. In other examples, the move to the next question can be triggered, for example, be voice

10   activation. Or, the timer could know to move to the next question and recalculate time averages by feeling a vibration in the desk, or a whistle or other sound from the user. Or, he timer could be programmed for any combination of keys pressed to act as the sub-completion trigger.

[40]   In one example, an aspect of the timer of the present invention is that it does not

15   make any sounds. Under standardized testing situations, sound is typically forbidden to come from a timer. No prior art timer is silent after the counter has reached zero.

[41]   The silence attribute is important for some uses of the timer. For example, during some tests, no noise can be made. In other applications or uses, it may be desirable for the timer to make noise, vibrate, or provide some other user perceivable notification. For

20   example, if a runner is using the timer, the runner might need some audible cue that they

had spent too much time on their current lap, and therefore that they needed to speed up. Similarly, a vibrating pulse through a watch on their arm could signify that too much time has been spent on a certain task.

[42]   Since athletic events are often timed, there is a method for using the invention to help minimize the time to complete the event. With the example of a runner, if the goal is to run 10 laps in a total of 20 minutes, it would be useful for the runner to know where he stands at key points along the way. With the timer, he can push the "sub-completion" button (similar to button 26 in the examples described above) at certain, discrete points along the way. If he chooses to divide the race into laps, he will push the "sub-completion" button at the end of each lap. At that time the runner can be told, either on the device itself, audibly, or both: (1) the total amount of time that will be expended on the race, assuming his pace remains unchanged; (2) how far ahead or behind he is of the required "per lap pace"; and/or (3) how much faster, from a time perspective, the next lap must be run in order to attain his targeted time.

[43]   In addition, the runner may choose to break the race into more parts, so that more "real time" adjustments are possible. For example, he can choose to break laps into halves or quarters, in which case there will be 20 and 40 discrete "sub-completion points" respectively. This means the runner will have many more chances of getting back on track.

[44]   In addition, if the runner has any "special" race strategies, these can be captured

within the apparatus as well. For example, if the runner wishes to run the first 9 laps at

one average speed, and then run the last lap at a somewhat faster speed, this can be

incorporated into the data that, following each depression of the sub-completion button,

5   tells him whether or not he is on course at each sub-completion point of the race. And, as

with all other timed events, the runner will get the results down to the second.

[45]   Following is an example of how the light 32 can be used to alert a user to certain

events during a test. When the test has 1 minute remaining, the light 32 (e.g., a red

flashing LED) goes off alerting the student to rapidly fill in the answers for all remaining

10   questions. Also, if at any point of the test, too much time is spent on the current question,

the warning light 32 is flashed 3 times to notify the user that they should consider moving

onto the next question. In this specific example, if there is 1 minute 15 seconds for a

question, once the per question timer counts down to 0, the light will flash 3 warnings

and then begin to-count negatively. The warning light feature can be disabled with the

15   light on/off button 48. A timer of the present invention may include any desired

warnings, depending on the use of the timer, or on needs of a user. In addition, events

that trigger warnings can be customized by an individual user.

[46]   If a test has several sections that have the same time limit, the student can use the

memory button 40 to remember the settings from the prior section. A user can simply

20   enter the time for the test and the number of questions, and then hold down the

"Memory" button 40 for 3 seconds. The time and question combination is now stored in memory and the next time "Memory" is pushed, the stored information will appear.

[47]   There are a set of very common tests taken in the United States, including the LSAT, MCAT, SAT, SAT II, GMAT, and GRE. The timer may include specific memory

5   buttons for these major tests (e.g., buttons 46 shown in FIG. 3). So, if a user is taking the LSAT, the user can press the "Time" button 42 and then the "LSAT" button 46, and the correct time will automatically be displayed. Similarly, for the question amount, the user presses the "Questions" button 44 and then the "LSAT" button 46, and the amount of questions that appear on the LSAT appears automatically. If the test has more than one

10   number of questions that is standard, then each time you press the "LSAT" button 46 the question amount rotates among various stored numbers of questions.

[48]   The timer of the present invention is designed to help people time their everyday activities and complete tasks in a timely manner. In order to give the most benefit to those using the timer, various methods or strategies for use of the timer may be used.

15   These methods relate to the best manner in which to use the timer to take control of tasks and time management. For example, for standardized tests, there are several different tests to take, including the SAT, ACT, LSAT, MCAT, etc. Each test has some basic timing strategies that are necessary to understand and to maximize test management, and therefore scoring ability. But each test also has specific attributes that distinguish them

20   from other tests when it comes to timing. They are all different lengths, contain different types of question logic, and demand different per-question timing strategies. The time of

the present invention may be used with specific time management skills that can be maximized by utilizing the functions and applications of the timer. A key element in this strategic approach involves the calculations that are programmed into the apparatus. Then, each time the sub-completion button is triggered, the user is given information,

5 generated by the apparatus that guides his/her actions at that point. For example, the SAT has a simple structure. It is widely held that the first questions in an SAT test section are easier than the later ones. All questions are worth the same amount. And, there is a penalty for guessing, incorrect questions are worth more than blank questions. One example of a time management technique would be to spend more time on the early

10 questions, making sure to get them right, since they are worth just as much as the hard ones. In order to facilitate this time management technique, the apparatus would take this fact into consideration. For example, if it is estimated that 5 questions will not be able to be completed, the amount of time per question can be increased. This will assure that the test taker is less likely to run out of time on the earlier, less difficult questions, since the 3

15 light flashes will occur after more time has passed. For each exam with known testing differences, the there is an optimizing method which can be employed, and which will give the test taker statistical updates each time the sub-completion button is depressed.

[49]   In certain instances, an event will include tasks with different levels of importance. An example is a business person whose "to do" list has tasks ranked from

20 least valued (Task Level 3), to median valued (Task Level 2), to most valued (Task Level 1). If we assume that Level 1 tasks are twice as valuable as Level 3 tasks and 1.5 times more valuable than Level 2 tasks, the apparatus can be programmed and a method

utilized to optimize the management and completion of these tasks. After each category of task is entered, using a sub-completion command (for example, entering *1 for each Level 1 task completed, *2 for each Level 2 task completed, and *3 for each Level 3 task completed), the person may told: (1) the total amount of time that will be expended on completing all the tasks assuming his pace remains unchanged; (2) how far ahead or behind he is of the required "per task completion pace"; and/or (3) how much faster the next task (by level) must be completed in order for all the tasks to be completed within the allotted time.

[50]   In the preceding detailed description, the invention is described with reference to specific exemplary embodiments thereof. Various modifications and changes may be made thereto without departing from the broader spirit and scope of the invention as set forth in the claims. The specification and drawings are, accordingly, to be regarded in an illustrative rather than a restrictive sense.